Brief Description of Sims and Games Phase III:

The Engage Program partners with campus instructors to transform higher education by exploring, evaluating, and disseminating best practices for teaching and learning with technology. The Simulations and Games Award Program was divided into phases. Phase III, July 2007- June 2008 & beyond, included developing 13 simulations and games from Phase II. Programmers and evaluators were added to the project teams, and some teams changed members. Engage Project Managers and staff participated in biweekly PM meetings for providing project updates (timelines, budget, milestones) and addressing issues and questions that arose, and planning Round 2. Monthly sims/games lunches for awardees and staff provided opportunities for project updates, research presentations, evaluation discussion(s), and programming reflection. Filament Games consulted on individual projects, and other outside consultants included evaluator Josh Morrill, 2 developers (David Love, WebWorks) and graphic designers Media Solutions (Medical Illustration).

Instructors (grant recipients) for Phase III who developed and implemented simulations and/or games for use in higher education were:

- C'est la (seconde) vie!: Using Second Life to Teach French Literature & Culture (Tom Armbrecht, Assistant Professor, College of Letters and Sciences - French and Italian)
- Composer Lab: Music Composition Experiment/Game (Jamie Henke, Faculty Associate, Division of Continuing Studies, & Alan Ng, Faculty Associate, Division of Continuing Studies)
- "Cool It": An Interactive Learning Game for Cryogenics (John Pfotenhauer, Professor, College of Engineering, & Greg Nellis, Professor, College of Engineering)
- Critique_It ™ (Michael Connors, Associate Professor, School of Education)
- GASP Redux - Interactive Tutorials in Probability (David Griffeath, Professor, College of Letters and Sciences – Mathematics, & James G. Morris, Professor, School of Business)
- Got Ice Cream? A Good Manufacturing Practices (GMP) Learning Tool (Rich Hartel, Professor, College of Agriculture and Life Science, & Steve Ingham, Professor, College of Agriculture and Life Science, & Patricia Lenz, Doctoral Student)
- JD Consult: A virtual farm consultation (Mike Collins, Professor, School of Veterinary Medicine)
- Madison Transportation Simulator (Jessica Guo, Assistant Professor, College of Engineering)
- Malaria: Beating the Bugs (Linda Bauman, Professor, School of Nursing, & Laurie Hartjes, Graduate Student)
- One-on-One with Student-Writers: A Simulator for New Instructors (Brad Hughes, Director, Writing Center, & Melissa Tedrowe, Assistant Director, Writing Center)
- Teaching the Speech Chain (Tom Purnell, Assistant Professor, College of Letters and Sciences – Linguistics, & Joe Salmons, Professor, College of Letters and Sciences – Humanities, German, & Eric Raimy, Assistant Professor, College of Letters and Sciences, English)
- Voice Games (Nadine Connor, Assistant Professor, College of Letters and Sciences – Communicative Disorders, School of Medicine and Public Health, & Lisa Vinney, Doctoral Student)
- Virtual French House (Andrew Irving, Senior Lecturer, College of Letters and Sciences – French and Italian, & Daniel Audaz)

PPR Participants: Jan Cheetham, Les Howles, David Gagnon, Cid Freitag, Renee Schuh, Dan LaValley, Carole Turner, Chris Blakesley, Chris Lupton, Blaire Bundy and Steve Krogull
In conjunction with the PPR, fifteen of 28 faculty awardees completed a survey in June 2008, near the end of Phase 3 of the Sims and Games Award Program. Their responses are summarized at the end of this report.

Other Staff Invited: Elizabeth Harris, Bruce Barton, Jasun Carr, Mike Litzkow and Ben Longoria

Facilitators: Alice Anderson, Lindsey Schmidt and Anne Eckenrod

Meeting Date: June 16, 2008

Point Person for Action Items: Chris Lupton

This report contains four sections:

I. What Went Well?

ENGAGE PROJECT TEAMS

- Teams were essential and worked well.
- Team members had the same expectations venturing into new territory. They kept the original goals and learning objectives in focus throughout the process.

STAFF (DEVELOPERS / PROJECT MANAGERS / INSTRUCTIONAL DESIGNERS/ EVALUATORS/PROJECT ASSISTANTS)
- Having developers in house and available was necessary.
- Being a customer of external developer and graphic artist was effective. Deadlines were kept.
- Paper storyboarding is invaluable. Sketching out ideas initially is quicker and helps brainstorming process.
- New method of user testing was effective. User testing was ongoing with students selected by faculty.
- Rapid prototyping was useful and appreciated across the board.
- Taking time for reflection and to build the GameQuest Game helped Engage staff better understand the processes, assets, strategies and challenges of a simulations and games program. Usually, Engage moves forward without this reflection time.

FACULTY

- Collaboration with faculty (e.g., GLS - Games Learning Society) opened opportunities to develop new relationships that ideally will continue.
- Faculty represented a broad range of interests, disciplines and backgrounds. Their projects were varied and diverse. They were excited about collaborating with teams.
- Faculty were excited and committed to doing their projects and interested in each other's projects.

ENGAGE FACULTY ADVISORY GROUP

- Faculty advisory group was very engaged in projects and recognized the amount work being done.
- Project updates were given at monthly community lunches and monthly faculty advisory group meetings.
- Advisory group kept a close eye on the projects and advised the Engage project manager about direction.

PHASE I: PREPARATION

- Phase I, providing education for internal AT (Academic Technology) staff during summer & fall 2006 was needed for researching aspects of educational simulations and games including instructional design, implementation in course, evaluation, learning theory, games theory, role of feedback, role of risk and failure. This educational opportunity changed the way AT staff thought and talked about simulations and games. Additionally, a plan for initiating a campus conversation on games and learning, with a goal of raising awareness that games and simulations can be useful for learning was created with Brian Rust. 1) a letter describing Engaging to Learn: Simulations & Games was written by the Engage Faculty Advisory Group and sent to the Provost; 2) a plan for stories in Computing @UW and Wisconsin Week was developed

COMMUNICATION
EXTERNAL

- Community lunches with Engage project teams including LS (Learning Solutions), LTDE (Learning Technology and Distance Education) staff, the Engage Faculty Advisory Group, Faculty, Staff and graduate student Awardees, and campus guests like Ron Kraemer, CIO, and Brian Rust, Head of

DoIT communications, provided an opportunity for getting key stakeholders involved, and helped create awareness within DoIT and across campus of Engage and AT.

- A new video on Engage included interviews with some sims/games aswardees.

- Ongoing project teams meetings to make decisions were helpful.

INTERNAL
- Bi-weekly check-ins with Engage Project Managers and team staff for updates and to address concerns were effective, and contributed to teams growing and working together on these projects, as well as providing a foundation for future project work together.

II.   *Lessons Learned*

ENGAGE PROJECT TEAMS

STAFF (DEVELOPERS / PROJECT MANAGERS / INSTRUCTIONAL DESIGNERS/ EVALUATORS)
- Project Managers had a different role for these awards than previous smaller awards. There was more focus on budget, timeline, and deliverables, and some didn't have much experience in these areas.
    o Some staff time on these projects was intentionally not reflected in individual project budgets because of the potential cost of the learning curve for staff in developing games and simulations
    o Innovative, experimental, exploratory projects like these require larger budgets for project management and potentially for instructional design, development, graphic design, and evaluation.
        ▪ More detailed paper prototypes or visions are necessary to get accurate cost estimates. These are difficult to get at first, when the learning goals and design concepts are being developed.
        ▪ Phase II was used for developing prototypes, and in some cases, this work continued during Phase III.
    o A new R&D (Research and Development) model is needed if we are going to continue this outside of Engage funded projects.
- Determining when projects are officially done was challenging, and evaluation time was not accurately estimated a year ago when the proposals were written
    o Having well-defined checkpoints and milestones in place to make strategic decisions about which projects to continue and which to drop will be useful for Round 2.

ENGAGE FACULTY ADVISORY GROUP

- The Faculty advisory group provided valuable input and support for the program.
- The community lunches, suggested by the advisory group, were essential to the success of the program.

PREPARATION

- Designing games for learning is an uncertain and risky adventure. In addition to the professional development that was done in Phase I, it would have also been useful to involve professional game designers like Filament at this early point. No one on staff was a games or simulation designer. AT staff created their own "just-in-time" professional development during the course of the project.

COMMUNICATION

EXTERNAL

- Educating awardees and managing their expectations about what is and is not doable is useful - faculty want to know when their ideas are not doable or do not align with the literature on effective simulation and game design.
- We need to learn how to identify when a project should be dropped, and how to communicate this to faculty, while balancing the need to continue to build long-term relationships with faculty and departments.

III. Action Steps

ENGAGE PROJECT TEAMS

STAFF (DEVELOPERS / PROJECT MANAGERS / INSTRUCTIONAL DESIGNERS/ EVALUATORS)
- Define criteria, budget and deliverables as clearly as possible for each phase and each project, and develop abilities to say 'no' based on these
- Identify and train as necessary skills needed by project managers – managing and communicating budget status, managing and adjusting timelines, defining finished products, etc.
- Include Developers input at all stages for each project – bring them in at the beginning, during the rapid prototyping phase – they can help define what is possible or not doable.

ENGAGE FACULTY ADVISORY GROUP

- Engage Faculty Advisory Group should:
  - Continue to select the awardees,
  - Advise on stages and criteria for terminating projects or continuing projects.

PREPARATION FOR ROUND 2

- Plan for awardee and staff participation and attendance at UW-Madison School of Education's Games Learning Society (GLS) Conference in July
- Define what success looks like, and what expected impact might look like for the Engage program and for individual projects – list the quality criteria (student numbers, length of use, ability to adjust, etc.)
  - Determine number of projects that are realistic based on budget, staff availability and timelines
  - Determine the checkpoints for continuing or dropping projects
  - Plan out the evaluation plan for projects and the program for Round 2, now that we know more about how to approach this
- One measure of success will be if faculty come to AT with grant dollars they have received to replicate Engage funded projects.
  - Prioritize products (games) and community building goals– how to balance and do both effectively.
  - Determine if separate grants are needed to flesh out ideas and to create products.
- Determine which of the original funded projects should continue.
- Decide if student evaluations need to be completed before moving forward with Round 2.

COMMUNICATION PLAN FOR ROUND 2

- Communicate goals of Engage Program and a broader outreach to faculty to submit proposals.
- Address the campus customer culture of what the realistic costs are to do innovative work, and the time needed.
- Communicate risk involved, and the time investment of sandbox activities.
- Continue the highly successful monthly community lunches for the current awardees, and bring the Round 2 awardees into this group as soon as they are selected.

IV. *Faculty Awardee Survey Summary*

(For questions 1 and 2, I grouped similar responses under the same bullet. If the same comment was made multiple times, I only listed it once. For question three I copied all of the responses.)

1. **What went well for you and your project in Phase III of the Simulations and Games program?**
   - A rigorous evidence based approach to game constructions and evaluation was used, with step-by-step revisions along the way.
   - We were able to think deeper pedagogically and revise the design significantly.
   - The team approach was indispensable. Diverse perspectives of the team members were vital to the project. Project manager was essential to keep the process moving forward in a timely fashion. Collaborative process was great. We have a wonderful team leader whose enthusiasm is contagious and all team members were excited to contribute to the process.
   - DoIT team was incredibly smart and responsive to our questions. It was a pleasure to work with creative, smart, dedicated and resourceful pros. DoIT team did a great job of keeping us on task in a friendly and encouraging manner, I never felt pressured or rushed. Engage team brings invaluable knowledge not only about technology, but about learning. Everyone on our team was wonderful to work with (2).
   - Proposal process was great. The many facets – 5-minute video, text, and various forms made the process enjoyable. The combination provided a very thorough description of the ideas.
   - The result is a great product that will be useful to us and others around the country.
   - The project has gone beyond our expectations and we are very happy.
   - Input from test users and games designers was critical and very useful. Incremental releases were very helpful both practically and to make decisions as we go and as a motivator to stay on task.
   - Evaluation of the use of the games with the help of Engage was great and will be very useful in the future.

2. **What could have been done better in Phase 3?**
   - Quicker access to a playable prototype would have been useful.
   - The Engage team should be more directive when appropriate, to explain that our ideas are sometimes not the best. Express your apprehensions more freely.
   - Share more research/stories about the pedagogical issues relating to teaching with games. Provide useful tips on game design based on learning theories, etc.
   - Study the time commitments required by DoIT staff and be sure they have the time available to meet those requirements. Programmer's availability was interrupted several times, which slowed us down and created inefficiencies because we had to re-build knowledge and ideas after breaks. Timing became a problem. Overall time management – from time to time we would lose momentum between meetings.
   - The amount of time and effort required to make a good simulation/game requires a much larger budget than was offered. Run phase III as it was with the understanding that some projects will "fall by the wayside". Then, give the best of the best a phase IV grant to finish the job and do it well.
   - More help with assessment.
   - Communication: 1 phone call is better than 10 emails in one afternoon.

3. **What advice do you have for the faculty who will be participating in the next Sims and Games Award Program?**
- Attend the luncheons (or other forums) to network with colleagues doing different projects because we have much to learn from each other's work. The potential for creativity is limitless, so have as much fun designing your game or simulation as the students will have using it to enhance their learning.

- I would tell faculty to not be afraid to ask questions all along the way and to really depend on the Engage team to provide the needed technical support. I would also tell them to not fear the video that we had to make (I hated that part but realize now that it was not that bad!) THANKS!!!
- Be flexible.
- Get your head deep into the game with your team members before you go too far down the road in building the actual game. Count on a lot of trial and error in the game building process. Get end user (student) feedback at several points along the way. What you THINK the students will like is not always what they ACTUALLY like.
- Gather good people around you and include people from many facets: pedagogy, gaming, programming, graphic designers, content specialists, and users.
- Keep the goals clear, concise, and reasonable. Do not expect students to share the same level of enthusiasm for computer learning platforms that faculty might have. Try out many different approaches to ideas and develop strategies to get feedback from students.
- Get your students involved early and often, and get your pre-game baseline evaluation data squared away as soon as possible. Make it a high priority to meet regularly with your Engage team and keep the development tempo up, to make the project more time-efficient.
- Plan games and/or simulation time frame and concepts far in advance; Get feedback from students throughout period that they are using games/sims, and make adjustments based on this feedback.
- Go ahead and apply even if you think your idea is too big or too small. The AT team is great at helping you to modify your concept to make it more feasible, and also to guide your ideas and find resources.
- Recognize that you have to devote significant time and effort to arrive at a good product. Having your own team of TAs or staff to participate in the process will make it more productive.
- Follow the program. I was skeptical about many steps in the program but now that I've gone through each one, they were all very valuable experiences and definitely improved our project.
- Be realistic! Keep instruction at the core of your project, not pedagogy. Beta test.
- Don't be surprised--it takes a lot of time and uncertainty to develop good new tools and applications for learning. (2) Do user testing of ideas and storyboards and prototypes. Doing this along the way--while sims are changeable--is invaluable. (3) Be sure to read some of the literature about online learning-- Academic Technology consultants can share valuable literature.